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BIOLOGICAL SURVEY: WAPITI RIVER

1970-1971

POLLUTION REPORT NO. 2

Alberta Fish and Wildlife Division

FISHERIES SECTION

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BIOLOGICAL SURVEY WAPITI RIVER 1970 - 71

by

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Summary

Biological surveys of the lower reaches of the Wapiti River and areas related to it were studied. Benthic fauna samples indicated that this portion of the river system could be classified as an ecologically mature, clean river system. A study of the benthic community revealed that approximately 85 percent of the animals collected were animals associated with clean water.

The number of benthic animals per square foot of river bottom sampled was more than the North Saskatchewan River, but less than more southerly Alberta rivers, e.g. Red Deer, Bow, and Oldman Rivers.

Fish sampling indicated that walleye (Stizostedion vitreum vitreum) were the predominant game fish in this portion of the Wapiti River. Walleye spawning in the 24 mile stretch of the Wapiti River appear to be limited to the resident population. Netting at the mouth of the Simonette River (only 2.1 miles downstream from the Wapiti-Smoky confluence) eastablished the presence of a relatively large spring walleye spawning run entering from the Smoky River.

In addition to walleyes, there are 14 other species of fishes inhabiting the lower 24 miles of the Wapiti River. Two of these species of fishes are not commonly found in Alberta, namely the Redside shiner (Richardsonius balteatus) and the largescale sucker (Catostomus machrocheilus).

WAPITI RIVER SURVEYS

INTRODUCTION

This study was designed to obtain base line information regarding the biological condition of the lower reaches of the Wapiti River. The proposed construction of a pulp mill at a site approximately 5 miles downstream from the O'Brien Bridge provided the impetus for this study. The program was therefore designed with only one purpose in mind; that of being able to compare the biological condition of the river prior to and after the establishment of this mill.

Measurements made at the O'Brien Bridge in 1970 by the Inland Waters Branch of the Department of Energy, Mines, and Resources showed that in 1970 the lowest water flow occurred in March and was measured at 316 cubic feet per second. The peak flow that year occurred in June with a flow of 16,500 cubic feet per second. The average flow for the year 1970 was 2,070 c.f.s. The river varies in width from approximately 50 yards to 150 yards. Riffle sections with gravel varying from pebble to rubble size are plentiful.

Benthic fauna samples[1] were obtained in the spring and fall of 1970. Fish samples were obtained in August of 1970 and May, June, 1971.

---

[1] Benthic fauna: are the animals living on the bottom of a river. The ones studied here are the young of four insect groups; the nymphs of stoneflies (Order Plecoptera) and mayflies (Order Ephmeroptera), the caddis fly larvae (Order Trichoptera) and the midge larvae (bloodworm) (Order Diptera, Family Chironomidae); and one worm group (sludge worms) (Order Oligochaeta).

A word of explanation regarding the bottom fauna results may be in order at this time. In clean water there is an association of sports fish, various "minnows", caddis worms, mayflies, stoneflies, and gill-breathing snails, each kind represented by a few individuals. In badly polluted zones this association disappears completely or is reduced, and is replaced by a dominant animal association of sludge worms, bloodworms, and a few others, represented by great numbers of individuals. The "percent of clean water associated organisms" measures the state of the existing association.

If the association is comparable in two habitats, i.e., the percent of clean water organisms is the same, then the "total number of animals per unit area" provides some measure of the productivity of a water body.

METHOD

Benthic fauna sample sites were carefully selected for location and bottom type (Fig. 1). Comparable habitats, riffle sections only, were sampled. A fine meshed triangular shaped net (mesh size 210 microns, base 1 ft., height 1 ft.) was utilized for sampling in May, August and October of 1970. The dip nets were firmly placed on the bottom of the river and the area immediately upstream was thoroughly disturbed using both feet and hands. One is able to sample a large area of the river at each sample site utilizing this method. The method is therefore useful to use when attempting to determine the percent of clean water associated organism. Ten two-minute random samples were obtained at each sample site. The disadvantage one encountered when using this method is that it is not possible to accurately state the total number of

animals per unit area. Additional benthic samples using a fine meshed Surber sampler (mesh size 210 microns) were obtained for this purpose in October, 1970. Ten square feet were sampled at each sample site.

Fish sampling was conducted at the sites indicated for 1970 (Fig. 2) and for 1971 (Fig. 3). Three methods were used: gill nets, set lines, and beach seines.

RESULTS

1. Benthic Samples

As indicated in Tables I and II, approximately 85 percent of the organisms collected in the Wapiti River could be classified as organisms generally associated with clean water. The rest were organisms which can be associated with both clean water and with polluted waters. The number of organisms per square foot, as sampled by the Surber sampler, varied from 81 to 185 with the average being 141 (Table II).

The 1970 fall benthic fauna sample with an average of 141 animals per square foot can be compared with the average 1970-71 fall samples from other rivers in Alberta: Oldman River above Lethbridge - 370 animals/sq. ft., Bow River above Calgary - 369 animals/sq. ft., Red Deer River above Red Deer - 317 animals/sq. ft., and the North Saskatchewan River above Edmonton - 94 animals/sq. ft. The reduction of approximately 50% in total number of animals/sq. ft. is always noted in the spring samples.

2. Fish Samples

The fish sampling program was established to answer the following two questions:

(a). What species of fish are present in the portion of the Wapiti River extending from one river mile above Big Mountain Creek to the confluence of the Wapiti and Smoky Rivers and

(b). Is this portion of the Wapiti River or any portion of the Smoky River immediately below the confluence of the Wapiti River with the Smoky River utilized as a spawning area for fish?

The sampling program was not intended to establish the total fish population of this portion of the Wapiti River. Total ennumeration of the various species of fish is a difficult task in a river of this size.

A total of 15 species of fish have been found in the lower 24 miles of the Wapiti River since 1968:

1. Walleye (*Stizostedion vitreum vitreum*)
2. Northern pike (*Esox lucius*)
3. Burbot (*Lota lota*)
4. Arctic grayling (*Thymallus arcticus*)
5. Rocky Mountain whitefish (*Prosopium williamsoni*)
6. Longnose sucker (*Catostomus catostomus*)
7. Largescale sucker (*Catostomus macrocheilus*)
8. White sucker (*Catostomus commersoni*)
9. Lake chub (*Covesius plumbeus*)
10. Redside shiner (*Richardsonius balteatus*)
11. Troutperch (*Percopsis omiscomaycus*)
12. Longnose dace (*Rhinichthys cataractae*)
13. Slimy sculpin (*Cottus cognatus*)
14. Brook stickleback (*Culaea inconstans*)

The 1970 fall sampling program indicated that walleye are the

predominant game fish in this portion of the Wapiti River (Table III). Northern pike, burbot, and white suckers were also found at this time of the year.

In the spring of 1971, four sampling sites were established to determine if the study area was utilized by fishes for spawning purposes (Fig. 3). Mature and spent fish of many species were found at most of the sites (Table V).

Fifty walleyes were caught at the confluence of the Simonette and Smoky Rivers, only a few miles downstream from the point where the Wapiti River empties into the Smoky River. These fish were caught on June 3, 1971 in 40 yards of 2 3/4 inch nylon gill net. It is likely that this was only a small part of a returning run of walleye. All the mature walleyes of both sexes were spent, i.e., finished spawning.

Larger fish caught in the Wapiti River in the spring were walleye, northern pike, Rocky Mountain whitefish, Arctic grayling, burbot, longnose sucker, flathead chub, and largescale sucker. The presence of Arctic grayling and Rocky Mountain whitefish is an indication that at present the waters of the Wapiti River are relatively clean as these two species of fish prefer clean, cold water.

Beach seines caught a large variety of fishes belonging to the family Cyprinidae which includes daces, chubs, shiners, etc. Seining also caught fingerling sized fishes of the larger species of fish such as suckers and pike. These "minnows" as they are often collectively called are an important source of food for the predacious fishes. The finding of the largescale sucker and the redside shiner in the Wapiti River is important as it indicates that fish are crossing the Divide from British Columbia to Alberta and the Wapiti River is likely the route

by which they travel.

From the information gathered it can be tentatively concluded that the portion of the Wapiti River under study is utilized by a variety of fish throughout the year, but only a samll proportion of the game fishes use this section of river for spawning purposes. The Simonette River is probably utilized for spawning by a relatively large migratory game fish population.

We recommend that this spawning area should be annually checked to determine the effect, if any, of the pulp mill effluent.

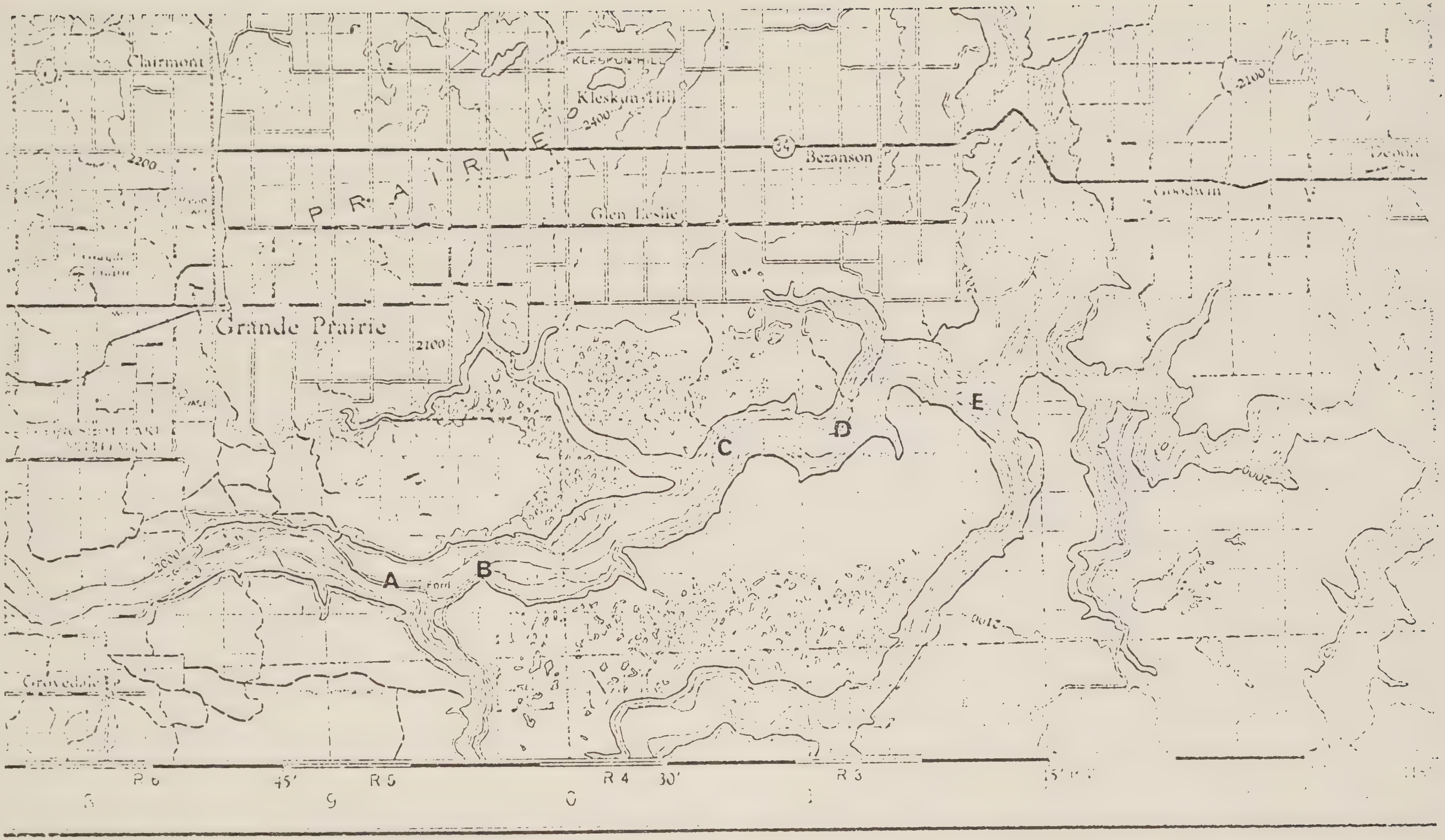

Figure 1. Benthic Fauna Sample Sites

1970

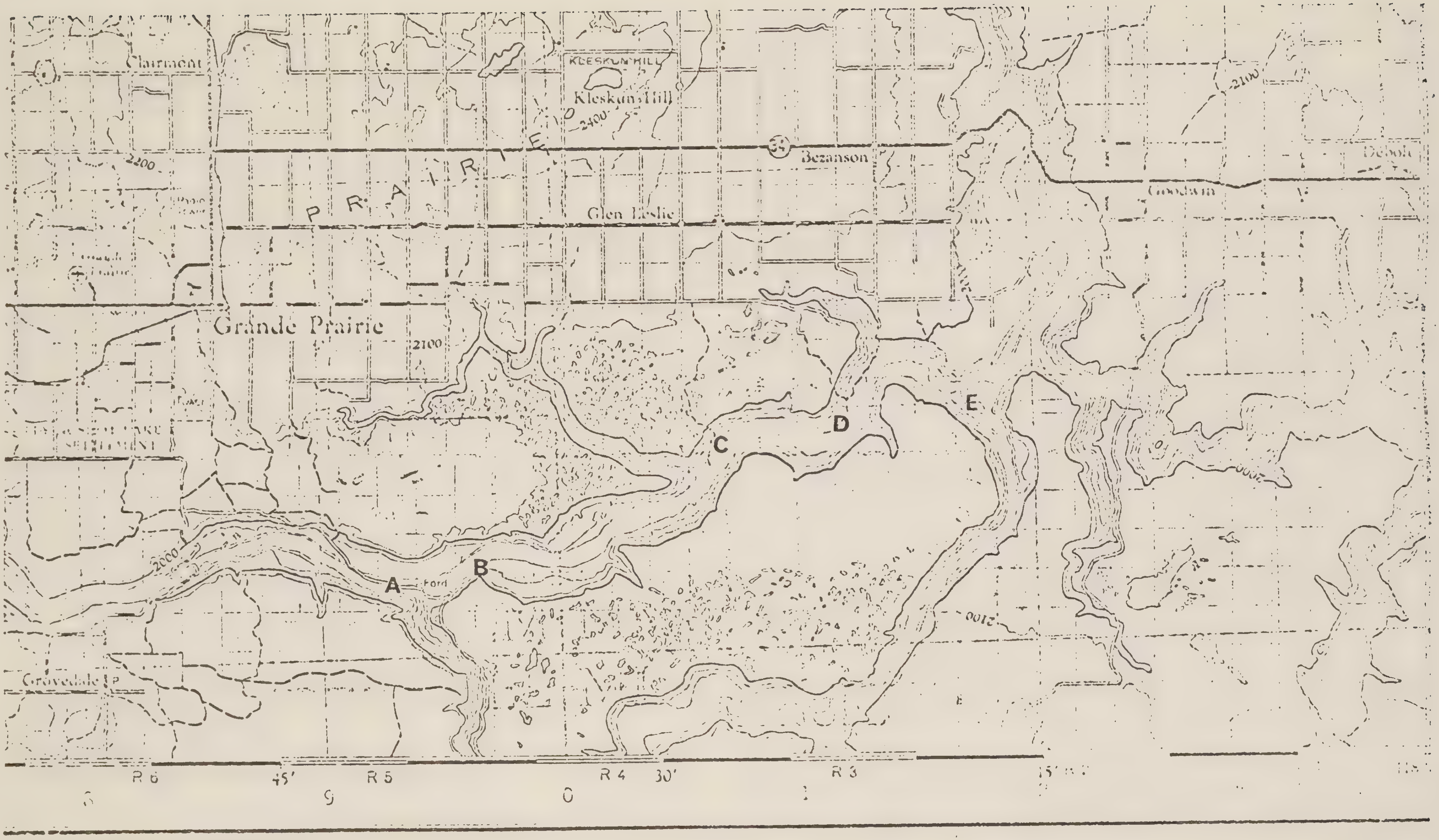

Figure 2. Fish Sampling Sites

1970

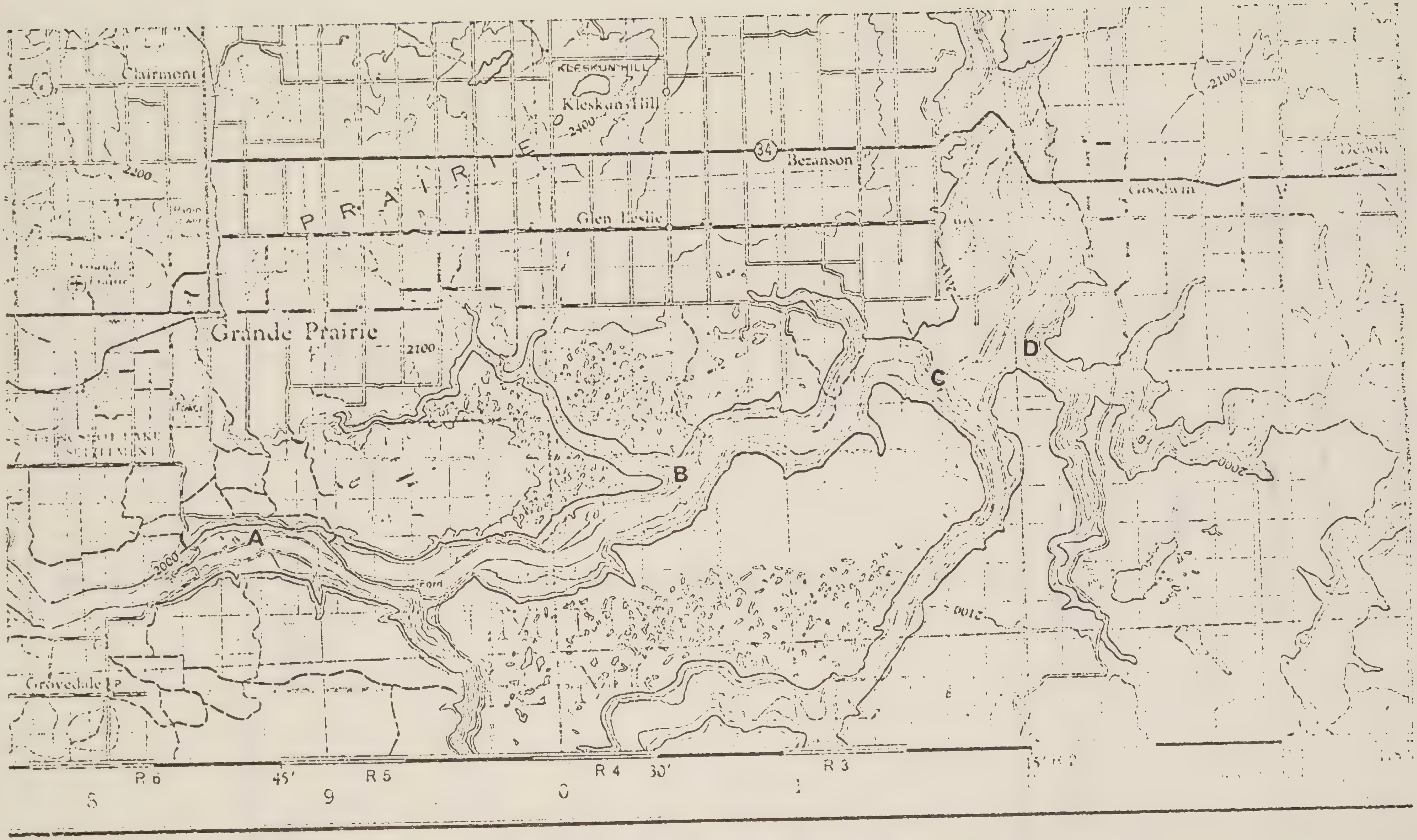

Figure 3. Fish Sampling Sites

1971

TABLE I

WAPITI RIVER BENTHIC FAUNA SAMPLES

1970

TRIANGULAR DIP NET SAMPLES

Date of Sample	Site	Percent of Clean Water Organisms	Estimated No. Organisms Per Sq. Ft.
May 6, 1970	Wembley Ferry	79	
	O'Brien Bridge	79	
Aug. 29, 1970	A - Big Mt. Creek	88	140
	B - N.A.R. Bridge	91	191
	C - Bear Creek	82	179
	D - Above Confluence	80	96
	E - At Confluence	73	155
Oct. 10, 1970	A - Big Mt. Creek	89	203
	B - N.A.R. Bridge	88	145
	C - Bear Creek	83	236
	D - Above Confluence	83	129

TABLE II

SURBER SAMPLER

Date of Sample	Site	Percent of Clean Water Organisms	No. Organisms Per Sq. Ft.
Oct. 10, 1970	A - Big Mt. Creek	95	81
	B - N.A.R. Bridge	85	185
	C - Bear Creek	88	146
	D - Above Confluence	86	152

TABLE III

SUMMARY OF FISH SAMPLING RESULTS

NETS AND SET LINES

WAPITI RIVER, AUGUST 1-24, 1970

Fish Species	Number Caught
Walleye (*Stizostedion vitreum vitreum*)	15
Northern pike (*Esox lucius*)	1
Burbot (*Lota lota*)	3
White sucker (*Catostomus commersoni*)	3

TABLE IV

WAPITI RIVER SEINES - AUGUST 24-27, 1970

	Site A	Site B	Site C	Site D	Site E
Location	1 mile upstream from Big Mt. Creek. South side of River	1/2 river mile downstream from the N.A.R. Bridge. North side of river.	1 river mile downstream from the mouth of Bear Creek.	4 river miles upstream from the confluence of the Wapiti & Smoky Rivers. South side of river.	At the confluence of the Wapiti and Smoky Rivers. South side river.
Catch	63 Lake Chub 12 Large Scale Suckers 10 Longnose Suckers 9 Flathead Chub 2 Trout Perch	38 Lake Chub 7 Longnose Sucker 1 Flathead Chub 1 Trout Perch 1 Longnose Dace 1 Northern Pike	126 Lake Chub 13 Flathead Chub 1 Slimy Sculpin 1 Mountain Whitefish	57 Lake Chub 6 Flathead Chub 1 Slimy Sculpin	42 Lake Chub 4 Large Scale Sucke 2 Longnose Suckers 2 Slimy Sculpins 1 Flathead Chub 1 Redside Shiner 1 Northern Pike
	Total: 96	Total: 49	Total: 141	Total: 64	Total: 53

Length of beach seine - 30 feet
Length of shore seined - approximately 25 yards
Average number caught per seine site - 80
Average weight per fish - 2 grams

TABLE V

SUMMARY OF FISH SAMPLING RESULTS

NETS - 1971

BEAR CREEK, WAPITI-SMOKY CONFLUENCE, SIMONETTE-SMOKY CONFLUENCE

Fish Species	Number Caught
Walleye (*Stizostedion vitreum vitreum*)	70
Northern pike (*Esox lucius*)	12
Rocky Mt. whitefish (*Prosopium williamsoni*)	6
Burbot (*Lota lota*)	7
Grayling (*Thymallus arcticus*)	1
Longnose sucker (*Catostomus catostomus*)	62
Flathead chub (*Platygobio gracilis*)	14
Largescale sucker (*Catostomus macrocheilus*)	1

APPENDICES

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VI. Fish sample record card, May-June 1971 20

APPENDIX I

STATISTICS OF FISH CAUGHT

NETS AND SET LINE

WAPITI RIVER, AUGUST 1-24, 1970

Fish Type	No. Caught	Average Age	Average Weight	Average Length
Walleye	15	7.1 yrs	1.7 lbs	16.33"
Northern Pike	1			
Burbot	3		3.6 lbs	22.0"
White sucker	3	4.8 yrs	1.5 lbs	16.5"

APPENDIX II

GILL NETS

WAPITI RIVER, AUGUST 1970

Site	Net Size	Length	Total Hrs.	No. Fish	Type	Scale No.
A	1"	100 ft	40 hrs	1	Northern pike	81103
	2"	50 ft	20 hrs	0		
	4"	100 ft	80 hrs	5	Walleye	81101
					Walleye	81102
					Walleye	81204
					Walleye	81205
					Walleye	81205
B	3"	50 ft	18 hrs	0		
	4"	100 ft	40 hrs	2	Walleye	81307
					Walleye	81308
C	4"	100 ft	40 hrs	2	Walleye	81409
					Sucker	81410
D	4"	100 ft	40 hrs	3	Walleye	81912
					Sucker	82017
					Sucker	82018

APPENDIX III

SET LINES

WAPITI RIVER AUGUST 1970

Site	Number of Sets	Number of Hooks	Number of Hours	Number of Fish	Type of Fish	Scale Number
A	3	30	60	2	Burbot	82120
					Burbot	82121
B	3	30	60	3	Walleye	81911
					Walleye	82122
					Walleye	82223
C	3	30	60	1	Walleye	82119
D	3	30	60	2	Walleye	82016
					Burbot	81915
E	3	30	60	1	Walleye	81914

APPENDIX IV

ALBERTA DEPARTMENT OF LANDS AND FORESTS

FISH AND WILDLIFE DIVISION

Form WFR 2

SAMPLE RECORD CARD

♀	1	Immature	6 ♂
	2	Maturing	7
	3	Mature	8
	4	Ripe	9
	5	Spent	10

Lake or Stream WAPITI RIVER

Date August 11-28, 1970

Species

C.R. No.

Mesh Size 2", 3", 4" - Gill nets and set lines

Sampler D.V. Gillman

Recorder D.V. Gillman

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	CYST COUNT	REMARKS
1	81101	38.4	454	7			Walleye - Net Big Mountain Creek
2	81102	38.0	499	6			Walleye - Net Big Mountain Creek
* 3	81103	33.0	250	-			Pike - Net Big Mountain Creek
4	August 12,	1970					
5	81204	53.3	1474	9			Walleye - Net Big Mountain Creek
6	81205	39.4	590	6			Walleye - Net Big Mountain Creek
7	81206	35.6	445	5			Walleye - Net Big Mountain Creek
8	August 13,	1970					
9	81307	48.7	1203	8			Walleye - Net N.A.R. Bridge
10	81308	40.6	604	9			Walleye - Net N.A.R. Bridge
11	August 14,	1970					
12	81409	46.4	999	8			Walleye - Net Bear Creek
* 13	81410	43.2	717	5			White sucker - Net Bear Creek
14	August 19,	1970					
15	81911	41.9	717	6			Walleye - Set line N.A.R. Bridge
16	81912	33.0	250	4			Walleye - Set line Above confluence
17	81914	43.2	726	6			Walleye - Set line At confluence
* 18	81915	35.6	908				Burbot - Set line Above confluence
19	82016	35.6	295	7			Walleye - Set line Above confluence
* 20	82017	43.2	668	4			Sucker - Net set Above confluence
* 21	82018	39.4	613	5			Sucker - Net set above confluence
22	82119	57.2	1680	11			Walleye - Set line Bear Creek
* 23	82120	76.2	2152				Burbot - Set line Big Mountain Creek
24	82121	-	-				Burbot - Set line Big Mountain Creek
25	82122	-	-				Walleye escaped Set line N.A.R. Bridge
26	82223	50.8	908	9			Walleye - Set line N.A.R. Bridge
27							
28							
29							
30							

APPENDIX V

WALLEYE GILL NET RESULTS

DATE	YARDS SET	SIZE	LENGTH OF TIME	WALLEYE
MOUTH OF WAPITI RIVER, 1971				
May 13, 1971	50	2 1/2"	20 hours	1 immature male 2 immature females
May 14, 1971	50	2 1/2"	20 hours	3 immature females 1 mature male
May 18, 1971	50	2 3/4"	20 hours	1 mature female ripe 1 mature male ripe
May 19, 1971	50	2 3/4"	22 hours	4 immature males 1 immature female
May 24, 1971	40	2 3/4"	20 hours	2 mature males spent
MOUTH OF SIMONETTE RIVER, 1971				
May 13, 1971	50	2 1/2"	20 hours	None
June 3, 1971	40	2 3/4"	10 hours	18 mature males spent 13 mature females spent 9 immature males 10 immature females
MOUTH OF BEAR CREEK, 1971				
May 13, 1971	10	3 "	20 hours	1 mature male ripe
May 19, 1971	17	4 "	22 hours	1 mature male spawning
May 24, 1971	17	3 "	18 hours	1 mature female spawning 1 mature male spawning

Form WFR 2

APPENDIX VI
ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀		♂
1	Immature	6
2	Maturing	7
3	Mature	8
4	Ripe	9
5	Spent	10

Lake or Stream WAPITI RIVER
Date May 13, 1971
Species
C.R. No.
Mesh Size 2½", 50 yds., 2 nets - 20 hours
Sampler F. Bishop
Recorder D. Gillman

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1		43.4	910	11	M	♂	Walleye - Ripe - Mouth of Bear Creek
2		46.2	1040		M	♀	Longnose - Ripe - Mouth of Bear Creek
3							
4		38.2	570		I	♂	Longnose sucker - Mouth of Wapiti
5		32.2	370		I	♂	Longnose sucker - Mouth of Wapiti
6		38.7	770		M	♂9	Longnose sucker - Mouth of Wapiti
7		32.5	360		M	♂9	Longnose sucker - Mouth of Wapiti
8		33.0	400		I	♂	Longnose sucker - Mouth of Wapiti
9		35.0	430		I	♀	Longnose sucker - Mouth of Wapiti
10		31.7	280		I	♀	Longnose sucker - Mouth of Wapiti
11		36.3	430		I	♀	Longnose sucker - Mouth of Wapiti
12		32.0	320		I	♀	Longnose sucker - Mouth of Wapiti
13		31.8	300		I	♂	Longnose sucker - Mouth of Wapiti
14		35.9	530		M	♂9	Longnose sucker - Mouth of Wapiti
15		30.0	270		I	♂	Longnose sucker - Mouth of Wapiti
16		29.2	250		I	♀	Longnose sucker - Mouth of Wapiti
17		33.2	360		I	♂	Longnose sucker - Mouth of Wapiti
18		32.8	390		I	♂	Longnose sucker - Mouth of Wapiti
19		30.6	280		I	♂	Longnose sucker - Mouth of Wapiti
20		29.6	230		I	♂	Longnose sucker - Mouth of Wapiti
21		32.6	330		I	♂	Longnose sucker - Mouth of Wapiti
22		33.9	400		M	♂9	Longnose sucker - Mouth of Wapiti
23		31.9	310		I	♀	Longnose sucker - Mouth of Wapiti
24		43.0	980		M	♂9	Largescale sucker - Mouth of Wapiti
25		28.4	250		M	♀ 9	Flathead chub - Mouth of Wapiti
26		29.0	280		M	♀ 7	Flathead chub - Mouth of Wapiti
27		29.2	250		M	♀ 9	Flathead chub - Mouth of Wapiti
28		26.8	210		M	♀ 7	Flathead chub - Mouth of Wapiti
29							
30							

Form WFR 2

ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀		♂
1	Immature	6
2	Maturing	7
3	Mature	8
4	Ripe	9
5	Spent	10

Lake or Stream WAPITI RIVER
Date May 13, 1971
Species
C.R. No.
Mesh Size 2½'', 50 yds., 2 nets - 20 hours
Sampler F. Bishop
Recorder D. Gillman

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1		27.2	220		M	♀9	Flathead chub - Mouth of Wapiti
2		30.8	310		M	♀7	Flathead chub - Mouth of Wapiti
3		27.0	190		M	♀7	Flathead chub - Mouth of Wapiti
4							
5							
6							
7							
8							
9							
10							
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ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀			♂
1	Immature	6	
2	Maturing	7	
3	Mature	8	
4	Ripe	9	
5	Spent	10	

Lake or Stream WAPITI - SMOKY

Date May 13, 1971

Species

C.R. No.

Mesh Size 2½''. 50 yds., - 2 nets

Sampler

Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1	31	26.0	200		M	♀ 9	Flathead chub - Mouth of Wapiti
2	32	27.2	200		M	♀ 9	Flathead chub - Mouth of Wapiti
3	33	29.0	260		M	♀ 9	Flathead chub - Mouth of Wapiti
4	34	41.6	390		M	♂	Burbot - Mouth of Wapiti
5	35	39.4	310		I	♂	Burbot - Mouth of Wapiti
6	36	28.3	240		M	♂	Grayling - Mouth of Wapiti
7	37	46.2	730		M	♂	Northern pike - Mouth of Wapiti
8	38	40.0	700		M	♀	Rocky Mt. Whitefish - Mouth of Wapiti
9	39	31.3	280		M	♀	Rocky Mt. Whitefish - Mouth of Wapiti
10	40	27.7	180		M	♂	Rocky Mt. Whitefish - Mouth of Wapiti
11	41	25.0	110		I	♂	Walleye - Mouth of Wapiti
12	42	27.9	210		M	♀	Rocky Mt. Whitefish - Mouth of Wapiti
13	43	35.2	450	4	I	♀	Walleye - Mouth of Wapiti
14	44	33.2	380	5	I	♀	Walleye - Mouth of Wapiti
15	# 2						
16	1	35.2	380		I	♀	Longnose sucker - Mouth of Wapiti
17	2	30.44	420		I	♂	Longnose sucker - Mouth of Wapiti
18	3	38.2	680		M	♀ 9	Longnose sucker - Mouth of Wapiti
19	4	41.5	780		M	♀ 9	Longnose sucker - Mouth of Wapiti
20	5	26.5	180		M	♀ 9	Flathead chub - Mouth of Wapiti
21	6	27.9	240		M	♀ 9	Flathead chub - Mouth of Wapiti
22	7	41.2	760	7	I	♀	Walleye - Mouth of Wapiti
23							
24	8	34.2	400	3	M	♂	Walleye - Mouth of Simonette
25	9	37.3	500	4	I	♀	Walleye - Mouth of Simonette
26	10	36.0	500	5	I	♀	Walleye - Mouth of Simonette
27	11	48.1	810		M	♂ 9	Northern pike - Mouth of Simonette
28	12	67.3	2580		M	♀ 9	Northern pike - Mouth of Simonette
29							
30							

Form WFR 2

ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀	1	Immature	6 ♂
	2	Maturing	7
	3	Mature	8
	4	Ripe	9
	5	Spent	10

Lake or Stream WAPITI - SMOKY

Date May 13, 1971

Species

C.R. No.

Mesh Size 2½", 50 yds., - 2 nets

Sampler

Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1	13	59.0	1320		M	♂ 9	Northern pike - Mouth of Simonette
2	14	30.6	290		I	♀	Longnose sucker - Mouth of Simonette
3	15	28.8	280		M	♀ 9	Flathead chub - Mouth of Simonette
4							
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ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀	1	Immature	6 ♂
	2	Maturing	7
	3	Mature	8
	4	Ripe	9
	5	Spent	10

Lake or Stream WAPITI RIVER
Date May 18-19, 1971
Species
C.R. No.
Mesh Size 2 3/4'', 50 yds. - 40 hrs.
Sampler D. Gillman
Recorder R. Hart

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1		34.5	490	5		♂	Walleye - Mouth of Wapiti
2		45.2	1030	10		♀	Walleye - Gravid - Mouth of Wapiti
3							Rocky Mt. whitefish - Mouth of Wapiti
4							Flathead chub - Mouth of Wapiti
5							Burbot - Mouth of Wapiti
6							Longnose sucker - Mouth of Wapiti
7							Longnose sucker - Mouth of Wapiti
8							Longnose sucker - Mouth of Wapiti
9							Longnose sucker - Mouth of Wapiti
10							Longnose sucker - Mouth of Wapiti
11							Longnose sucker - Mouth of Wapiti
12							Longnose sucker - Mouth of Wapiti
13							Longnose sucker - Mouth of Wapiti
14							Longnose sucker - Mouth of Wapiti
15							Longnose sucker - Mouth of Wapiti
16							Longnose sucker - Mouth of Wapiti
17							Longnose sucker - Mouth of Wapiti
18							Longnose sucker - Mouth of Wapiti
19							Longnose sucker - Mouth of Wapiti
20							Longnose sucker - Mouth of Wapiti
21							Longnose sucker - Mouth of Wapiti
22							
23							
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29							
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Form WFR 2

ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀		♂
1	Immature	6
2	Maturing	7
3	Mature	8
4	Ripe	9
5	Spent	10

Lake or Stream WAPITI RIVER
Date May 20, 1971
Species
C.R. No.
Mesh Size 2 3/4'', 40 yds., 22 hrs., 3'', 17 yds., 4'', 17 yds.
Sampler
Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1							May 20 2 3/4''
2	Set # 1						
3		45.3	885	11		♂	Walleye spawning - Mouth of Bear Creek
4							
5	Set # 2						
6		36.5	400	6	1	♂	Walleye - Mouth of Wapiti
7		35.2	345	5	1	♂	Walleye - Mouth of Wapiti
8		41.9	740	5	1	♀	Walleye - Mouth of Wapiti
9		32.8	280	4	1	♂	Walleye - Mouth of Wapiti
10		39.1	480	7	1	♂	Walleye - Mouth of Wapiti
11		34.1			1		Rocky Mt. whitefish - Mouth of Wapiti
12							Longnose sucker - Mouth of Wapiti
13							Longnose sucker - Mouth of Wapiti
14							Longnose sucker - Mouth of Wapiti
15							Longnose sucker - Mouth of Wapiti
16							Longnose sucker - Mouth of Wapiti
17							
18	Set # 3						
19		72.0	2380			♀	Northern pike - ripe - Above proposed pulp mill
20							site.
21				1		♂	Northern pike - Above proposed pulp mill site
22				1		♀	Northern pike - Above proposed pulp mill site
23							
24							
25							
26							
27							
28							
29							
30							

Form WLR 2

ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀			♂
1	Immature	6	
2	Maturing	7	
3	Mature	8	
4	Ripe	9	
5	Spent	10	

Lake or Stream WAPITI RIVER

Date May 24, 1971

Species

C.R. No.

Mesh Size 2 3/4", 3", 4"

Sampler

Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1							3", 7' at Bear Creek
2	Set # 1						
3		39.3	760	9		♂	Walleye spawning - Bear Creek
4		48.1	831	10		♀	Walleye spawning - Bear Creek
5							
6							2 3/4", 40 yds. at Mouth of Wapiti
7							
8	Set # 2						
9		40.1	819	7		♂	Walleye spent - Mouth of Wapiti
10		29.1	672	9		♂	Walleye spent - Mouth of Wapiti
11							Longnose sucker - Mouth of Wapiti
12							Longnose sucker - Mouth of Wapiti
13							Longnose sucker - Mouth of Wapiti
14							Longnose sucker - Mouth of Wapiti
15							Longnose sucker - Mouth of Wapiti
16							Longnose sucker - Mouth of Wapiti
17							Longnose sucker - Mouth of Wapiti
18							Longnose sucker - Mouth of Wapiti
19					1		Northern pike - Mouth of Wapiti
20							
21							4", 17 yds., below ARR Bridge
22	Set # 3						
23					1		Northern pike - Below ARR Bridge
24							Burbot - Below ARR Bridge
25							Burbot - Below ARR Bridge
26					1		Northern pike - Below ARR Bridge
27							
28							
29							
30							

ALBERTA DEPARTMENT OF LANDS AND FORESTS 27 Form WFR 2

FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀			♂
1	Immature	6	
2	Maturing	7	
3	Mature	8	
4	Ripe	9	
5	Spent	10	

Lake or Stream SMOKY RIVER Date June 3, 1971

Species 50 walleye, 7 suckers (longnose), 2 Northern pike C.R. No.

Mesh Size 2 3/4", 40 yds., 10 hours

Sampler

Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS
1		39.0	454	7		♂	Walleye - spent - Mouth of Simonette
2		45.7	950	6		♂	Walleye - spent - Mouth of Simonette
3		43.0	754	8		♀	Walleye - spent - Mouth of Simonette
4		42.0	600	9	1	♂	Walleye - Mouth of Simonette
5		35.8	356	4	1	♀	Walleye - Mouth of Simonette
6		44.5	856	9		♂	Walleye - spent - Mouth of Simonette
7		36.7	458	4	1	♀	Walleye - Mouth of Simonette
8		34.0	325	5		♂	Walleye - spent - Mouth of Simonette
9		33.5	325	6		♂	Walleye - spent - Mouth of Simonette
10		40.2	650	9		♂	Walleye - spent - Mouth of Simonette
11		41.0	650	6		♀	Walleye - spent - Mouth of Simonette
12		31.0	250	4	1	♀	Walleye - Mouth of Simonette
13		31.8	304	4	1	♀	Walleye - Mouth of Simonette
14		38.6	554	5		♂	Walleye - spent - Mouth of Simonette
15		43.7	704	7		♀	Walleye - spent - Mouth of Simonette
16		37.0	456	5		♂	Walleye - spent - Mouth of Simonette
17		41.1	608	7		♂	Walleye - spent - Mouth of Simonette
18		39.2	500	4		♀	Walleye - spent - Mouth of Simonette
19		38.1	454	6		♂	Walleye - spent - Mouth of Simonette
20		36.6	452	5		♂	Walleye - spent - Mouth of Simonette
21		33.3	356	4	1	♀	Walleye - Mouth of Simonette
22		35.0	400	5		♂	Walleye - spent - Mouth of Simonette
23		44.9	952	7		♀	Walleye - spent - Mouth of Simonette
24		52.1	1306	19		♀	Walleye - spent - Mouth of Simonette
25		42.0	704	8		♂	Walleye - spent - Mouth of Simonette
26		45.0	950	6		♀	Walleye - spent - Mouth of Simonette
27		27.0	156	2	1	♀	Walleye - Mouth of Simonette
28		39.5	600	5		♂	Walleye - spent - Mouth of Simonette
29		41.5	654	7		♂	Walleye - spent - Mouth of Simonette
30		38.5	600	5		♀	Walleye - spent - Mouth of Simonette

Form WFR 2

ALBERTA DEPARTMENT OF LANDS AND FORESTS
FISH AND WILDLIFE DIVISION

SAMPLE RECORD CARD

♀		♂
1	Immature	6
2	Maturing	7
3	Mature	8
4	Ripe	9
5	Spent	10

Lake or Stream

Date June 3, 1971

Species

C.R. No.

Mesh Size

Sampler

Recorder

NUMBER	SAMPLE NUMBER	TOTAL LENGTH Cm. Inch. ☐ Mill. ☐	WEIGHT Lbs. ☐ Gms. ☒	AGE	MATURITY	~~CYST COUNT~~	REMARKS Simonette (continued)
1		48.8	1040	11		♀	Walleye - spent- Mouth of Simonette
2		41.9	556	8		♂	Walleye - spent - Mouth of Simonette
3		38.1	506	6	1	♂	Walleye - Mouth of Simonette
4		41.0	654	6	1	♀	Walleye - Mouth of Simonette
5		43.3	804	4	1	♂	Walleye - Mouth of Simonette
6		34.0	354	3	1	♂	Walleye - Mouth of Simonette
7		38.6	500	5		♂	Walleye - spent - Mouth of Simonette
8		48.2	558	4	1	♀	Walleye - Mouth of Simonette
9		31.0	2561	3	1	♂	Walleye - Mouth of Simonette
10		38.7	506	8		♂	Walleye - spent - Mouth of Simonette
11		37.7	554	7		♀	Walleye - spent - Mouth of Simonette
12		44.0	804	8		♀	Walleye - spent - Mouth of Simonette
13		47.0	1040	9		♀	Walleye - spent - Mouth of Simonette
14		37.0	570	3	1	♂	Walleye - Mouth of Simonette
15		31.8	300	2	1	♂	Walleye - Mouth of Simonette
16		32.5	350	2	1	♂	Walleye - Mouth of Simonette
17		33.5	270	5	1	♂	Walleye - Mouth of Simonette
18		36.0	420	4	1	♂	Walleye - Mouth of Simonette
19		36.0	420	3	1	♀	Walleye - Mouth of Simonette
20		34.5	350	4	1	♀	Walleye - Mouth of Simonette
21							Longnose sucker - Mouth of Simonette
22							Longnose sucker - Mouth of Simonette
23							Longnose sucker - Mouth of Simonette
24							Longnose sucker - Mouth of Simonette
25							Longnose sucker - Mouth of Simonette
26							Longnose sucker - Mouth of Simonette
27							Longnose sucker - Mouth of Simonette
28							Northern pike - Mouth of Simonette
29							Northern pike - Mouth of Simonette
30							